

1 1. (currently amended) A method of adding a watermark to a sequence of executable instructions
2 to render the sequence authenticatable,
3 the method comprising the steps of:
4 receiving the sequence of executable instructions and a key; and
5 using the key to modify the sequence of executable instructions so that the watermark ~~may~~
6 ~~be obtained~~ is obtainable from the modified sequence, the sequence being modified such that the
7 usefulness of the modified sequence for the sequence's intended purpose is not affected by the
8 modifications made thereto and the watermark representing a watermark value, alteration or
9 absence of the watermark value being used when the sequence is authenticated to determine
10 whether the sequence is authentic.

1 2. (canceled)

1 3. (currently amended) The method set forth in claim 2-1 wherein the step of modifying the
2 sequence includes the steps of:
3 using the key to determine locations in the sequence including modification locations at
4 which the sequence is to be modified; and
5 modifying the sequence at the modification locations such that the locations specified by
6 the key represent the watermark value,
7 whereby the watermark value ~~may be obtained~~ is obtainable from the modification locations.

1 4. (original) The method set forth in claim 3 wherein the step of modifying the sequence includes
2 the step of:
3 inserting one or more executable instructions at each of the modification locations, the
4 inserted instructions having no effect on any output from the execution of the sequence of
5 instructions.

1 5. (original) The method set forth in claim 4 wherein:

2 the instructions at the locations specified by the key represent values of digits of the
3 watermark value.

1 **6.** (original) The method set forth in claim 1 further comprising the step of:
2 providing the watermark value to an authenticating entity that authenticates the
3 watermarked code.

1 **7.** (original) The method set forth in claim 1 further comprising the step of:
2 providing the key to the authenticating entity.

1 **8.** (previously presented) The method set forth in claim 1 wherein:
2 the modified sequence of executable instructions is modified such that when the modified
3 sequence of executable instructions is executed, execution state is produced which has a property
4 that depends on the key,
5 whereby the watermark value is a description of execution state from the modified sequence.

1 **9.** (previously presented) The method set forth in claim 8 wherein:
2 the execution state is a stack depth graph.

1 **10.** (original) The method set forth in claim 9 wherein:
2 the execution state is output from the execution.

1 **11.** (original) The method set forth in claim 10 wherein:
2 the property is an order of elements in the output.

1 **12.** (original) The method set forth in claim 10 wherein:
2 the property is an additional element in the output.

1 **13.** (original) The method set forth in claim 10 wherein:
2 the property is a class of an element in the output.

- 1 **14.** (original) The method set forth in claim 10 wherein:
2 the property is a constraint that is satisfied by elements of the output.
- 1 **15.** (original) The method set forth in claim 8 further comprising the step of:
2 providing a description of the produced execution state to an authenticating entity that
3 authenticates the watermarked code.
- 1 **16.** (original) The method set forth in claim 15 further comprising the step of:
2 providing the key to the authenticating entity.
- 1 **17.** (previously presented) The method set forth in claim 1 further comprising the step of
2 providing the key to an authenticating entity that authenticates the sequence.
- 1 **18.** (previously presented) A method of authenticating a watermarked sequence of executable
2 instructions, the watermark having been produced by modifying the sequence according to a key
3 such that certain of the instructions in the sequence represent a watermark value,
4 the method comprising the steps of:
5 receiving the watermarked sequence or a copy thereof;
6 using the key to locate the certain instructions in the received sequence and read the
7 watermark value; and
8 using alteration or absence of the watermark value to determine whether the received
9 sequence is authentic.
- 1 **19.** (previously presented) The method of authenticating set forth in claim 18, the method further
2 comprising the step of:
3 receiving another watermark value; and
4 in the step of using alteration or absence of the watermark value to determine whether the
5 received sequence is authentic, the watermark value is compared to the other watermark value.

1 **20.** (original) The method of authenticating set forth in claim 19, the method further comprising
2 the step of:
3 receiving the key.

1 **21.** (currently-amended) A method of authenticating a sequence of executable instructions that
2 has been watermarked by modifying the sequence according to a key such that when the sequence
3 is executed, first execution state is produced,
4 the method comprising the steps of:
5 receiving a description of second execution state; and
6 if the received description does not describe the first execution state, determining that the
7 sequence of executable instructions whose execution produced the second execution state is not
8 authentic.

1 **22.** (previously presented) The method set forth in claim 21 further comprising the step of:
2 receiving another description of the execution state, the other description describing
3 execution state produced by the execution of the modified sequence; and
4 in the step of determining, comparing the description and the other description.

1 **23.** (original) The method set forth in claim 22 wherein:
2 the other description is a stack depth graph.

1 **24.** (previously presented) The method set forth in claim 21 wherein the execution state is output
2 from the execution, the output having a property which can be determined using the key and
3 the method further comprises the steps of:
4 receiving the output from the execution; and
5 the step of determining includes the steps of
6 receiving the execution state;
7 employing the key to determine the property; and
8 comparing the determined property with the received description.

1 **25.** (original) The method set forth in claim 24 wherein:

2 the determined property is an order of elements in the output.

1 **26.** (original) The method set forth in claim 24 wherein:

2 the determined property is an additional element in the output.

1 **27.** (original) The method set forth in claim 24 wherein:

2 the determined property is a class of an element in the output.

1 **28.** (original) The method set forth in claim 24 wherein:

2 the determined property is a constraint that is satisfied by elements of the output.